FRPA Landslide Issues Implementation Group
August 9, 2011 – Ketchikan, Alaska
DRAFT MINUTES – MEETING #1

Attendance. Bert Burkhart, Mary Edenshaw, Marty Freeman, Bob Girt, Kevin Hanley, Mark Kaelke, Kyle Moselle, Pat Palkovic, Paul Slenkamp, Greg Staunton, Mark Vinsel, and Ron Wolfe were present in Ketchikan. Karl Hagerman was present by phone from Petersburg. Bill Rotecki was absent for family medical reasons.

Introductions. All working group members introduced themselves. Brian Kleinhenz from Sealaska was also present and may serve as an alternate for Ron Wolfe at some meetings.

Review of landslide standard review process to date *(see White Paper in handouts).* Freeman presented an overview of the process to review the Forest Resource and Practices Act (FRPA) standards to prevent or minimize adverse impacts of landslides. In October 2007, the Mitkof Highway Homeowners Association originally raised concerns about public safety hazards from proposed timber harvesting on Mental Health Trust land upslope from residential areas along the Highway. The Association asked the Board to request changes to FRPA to provide authority to address public safety issues. The Board of Forestry asked the Division of Forestry (DOF) to convene a Science & Technical Committee S&TC) to assess the geographical scope of public safety hazards associated with landslides and forest operations.

The S&TC assessed coastal forest lands from Dixon Entrance to Cordova and developed scoping maps of potential slide hazards above public roads and residential areas.

The BOF reviewed the scoping information, and after lengthy discussion decided not to request public safety authority under FRPA. They felt that the public safety risks were better addressed through local government ordinances. However, they did ask the S&TC to review the existing FRPA standards to determine whether any changes or additions were needed to adequately protect fish habitat and water quality from landslide impacts associated with forest operations.

The S&TC reviewed the landslide standards in the Forest Resources and Practices Act and the BMPS in its regulations. They developed a dozen recommendations for definitions, BMPs, and training programs.

The Board reviewed the S&TC recommendations and asked DOF to convene an Implementation Group of affected stakeholders. They charged the group with determining how to implement the recommendations in a practical and effective manner on the ground, and to address the one point on which the S&TC did not reach consensus. Results from the group will go to the BOF. If regulatory changes are endorsed, they will go through the standard process to establish regulations, and agencies will be directed to implement other administrative actions.

Freeman noted that in previous FRPA processes, consensus recommendations from the Implementation Groups were endorsed by Board and recommendations for statutory and

amendments and changes to regulations/were adopted.

Implementation Group charge, organization, and principles *(see handout)***.** Freeman explained that the Group is charged with determining how to apply the S&TC consensus recommendations in a practical and effective manner on the ground, and to recommend a resolution for the one non-consensus item from the S&TC. The Group can also recommend implementation methods such as regulation changes, training, field guides, etc. Four principles that guided revision of FRPA in 1990, also guide this effort: Fairness, No Big Hit, Enforceability, and Professional Management.

The S&TC process focused on science and technical information. The I.G. review includes economic concerns. Freeman noted that FRPA applies to public and private land. On private land FRPA prohibits impairment of the productivity of land and water for renewable resources. Public safety is outside FRPA authority.

Implementation Group meetings are informal work sessions rather than formal meetings. All meetings are open to the public. Prior to the first meeting, Freeman sent a letter describing the Implementation Group process and membership to a mailing list of interested parties, including individuals, organizations, Native corporations, municipalities, and businesses. Freeman will send a copy of Group meeting minutes to the mailing list, and distribute any public comments to the committee. There will be opportunities for public comment at each meeting.

Group members may designate an alternate with similar expertise to participate on the committee when they cannot be present. Members should brief their alternates prior to meetings they cannot attend.

Wolfe noted that there has sometimes been iterations between the science and technical committees and a policy group during these processes. Freeman noted that the landslide issues are narrower than the anadromous waters issues addressed by previous groups.

Hagerman commented that he is aware of the public safety concerns on Mitkof Island and asked whether the S&TC recommended that Petersburg adopt an ordinance on this issue. Freeman clarified that it was the Board of Forestry that recommended that public safety be addressed through other means, including ordinances or other local government actions under Title 29. Moselle noted that the Board reviewed a lengthy list of options for addressing public safety. Slenkamp added that the S&TC did a major risk mapping effort, and that the Petersburg area was the only area with significant public safety risks where the areas at risk hadn't already been harvested. He added that some boroughs (e.g., Ketchikan and MatSu) have addressed forestry issues like this through ordinances.

Review of existing standards. *(see FRPA fieldbooks and White Paper)* Freeman reviewed the current landslide standards in the FRPA and its regulations. They are summarized in the White Paper handout and listed in full in the Act (yellow fieldbook) and regulations (green fieldbook)

Freeman noted some "gaps" in the existing standards at the start of the process. The standards do not define "landslide," "unstable slope," "unstable or slide-prone slope," "unstable slope or slide-prone area," "high risk of slope failure," or "fill material prone to mass wasting." The regulations do not have best management practices (BMPs) for ppecific harvesting and yarding methods in unstable or slide-prone areas, partial harvesting, or helicopter operations.

In response to a question on downhill yarding, Burkhart clarified that cable logging systems use a complete loop of cable so that they can control the speed and movement of logs in yarding operations.

Slenkamp commented that the Board of Forestry spent several years discussing FRPA and its regulations regarding logging and unstable slopes. While the forest practices standards don't directly address public safety, they do address issues that could cause mass wasting in areas with water quality issues, and that will also help prevent or minimize slides in areas with safety concerns.

Vinsel noted that the Board did discuss the idea that slides would likely have water quality impacts in areas with public use.

Hagerman agreed that water quality issues may accompany public safety issues – the Mitkof homeowners do rely on streams in their area for their drinking water. The work on the FRPA standards will help them, but they don't feel that way entirely. Freeman noted that she invited the Mitkof Highway Homeowners Association to participate in the Implementation Group because of the water quality issues, but they declined to do so.

Wolfe noted that the FRPA gives the Division of Forestry the authority to issue a stop work order if a violation of the Act or regulations is likely to occur and harm public resources. They can use this tool if an operator hasn't complied with 11 AAC 95.340 and designed a logging system that will comply with the Act. Hanley observed that in practice stop work order's are usually only applied after the fact – when a violation is found in the field. Palkovic noted that the Division of Forestry has other tools to ensure FRPA compliance before the need to issue a formal stop work order.

Moselle said that the S&TC mentioned that it might be good to look at the Detailed Plan of Operations (DPO) and Forest Land Use Plan requirements to make sure enough information is gathered to identify slide issues ahead of time. The agencies like to be proactive.

In response to a question, Freeman clarified that the DPO review process is an interagency process, not a public review process. Any entity can request to receive a copy of the basic DPO information for a particular area. Palkovic added that DOF used to be required to send a copy of DPOs to affected coastal districts, but that is no longer the case since the Alaska Coastal Management Program was not extended by the legislature. She noted that the agencies and coastal districts were only to include comments to operators and landowners based on FRPA authorities. However, municipalities can talk directly with operators and owners if they have

other concerns.

Freeman clarified that DPO requirements apply to state operations not managed by the Dept. of Natural Resource, trust lands, municipal lands, and private land. On state land managed by DNR, the Division of Forestry must prepare a Forest Land Use Plan, which is subject to public and interagency review. Some municipalities have similar requirements of their own.

Slenkamp reported that the Mental Health Trust has voluntarily not harvested its land on Mitkof Island that caused the original public safety concerns. The Trust is working hard on a land exchange with the US Forest Service that would resolve this issue near Petersburg. A Detailed Plan of Operations was submitted to harvest the parcel, but the Trust has not acted on the harvest plans. Hagerman said that the Trust's forbearance is appreciated.

Review of STC products and recommendations

Freeman summarized the information in the products from the S&TC. The bibliography *(see bibliography handout)* includes references relevant to landslide issues associated with forest operations in coastal Alaska. Freeman encouraged Group members to read the abstracts for the 10 starred papers in the bibliography. The S&TC identified these papers as key references.

The S&TC also developed GIS scoping maps *(see scoping maps handout)* to assess the geographic extent of landslide hazards that could present risks to public safety. Public roads and evidence of buildings were used to identify areas with significant public use. The total area reviewed covered 29.4 million acres, of which an estimated 51,700 acres were in potential hazard areas along public roads, including 7,600 acres that had some type of buildings. The scoping maps also show land ownership, steep slopes, municipal boundaries, and past harvesting in scoping areas identified with buildings. Almost three-quarters of the hazard land along the road is managed by the USFS or the state. However, three-quarters of the area near buildings was in private, trust, or municipal ownership near communities.

Most of the hazard area previously had harvesting in at least a portion of the upslope forest, and Slenkamp noted that many of the areas were harvested prior to the current version of FRPA. Palkovic added that while much of the general hazard area has been logged, some patches within these areas weren't cut, usually because of low values or the difficulty of operations on the steepest slopes.

Prior harvests in hazard areas include past operations near Ketchikan, Klawock, and Wrangell. He said that Columbia Helicopters has done a good job minimizing impacts of harvest operations, for example along the Tongass Narrows. The helicopter operations reduced roading and allowed for partial cuts. Previously, areas were logged primarily by conventional logging [e.g., cable or ground-based systems]. Foresters can use helicopter yarding or full-suspension cable systems on problematic areas.

Vinsel asked whether steep slopes increase operating costs for helicopter systems. Burkhart

explained that slope doesn't matter as much with helicopter operations. Helicopters are the most expensive yarding system. They are used where road building is too expensive, especially for partial cuts. There are terrain limits for helicopters where you can't get people in safely.

Slenkamp emphasized that there should be a site-specific look at harvest operations when designing operation – you need to see the area on the ground.

Freeman reported the S&TC also developed eleven BMP and training recommendations *(see Consensus Point handout)*. They include proposed definitions, criteria for identifying unstable areas and saturated soils, additions or changes to several BMPs, and training needs.

Vinsel said he wants to be sure that new information on economics is raised in the discussion of the S&TC recommendations. Burkhart stated that there will be places where the landslide standard proposals will raise economic issues for field operations.

Kaelke asked how it is determined that an event is "likely" to occur? Freeman replied that the S&TC tried to incorporate factors affecting likelihood into the definitions (e.g., C9am). It will still require best professional judgment. Some states require reports by geotechnical experts in slide-prone areas, but that doesn't always provide a solution. In the case of the Mitkof Island concerns, the opposing sides each hired experts, and they disagreed. Moselle added that the likelihood of a problem occurring relates in part to the knowledge and skill of the operator on the ground, and the types of equipment available for use.

Kaelke asked whether slides occur because potential problems are unknown or ignored. Palkovic said that soil wants to go downhill with gravity. There are some areas with evidence of problems. Operators may bring up concerns. Different people notice different things in the field. Operators often want to avoid problems – washouts cost them more. Some will try to take shortcuts.

Wolfe commented that even among geotechnical experts, dueling experts can occur. Licensing of geotechnical experts is beyond FRPA authority. Geologists in Alaska are largely associated with the oil industry – the Alaska licensing system is not helpful to forest industry needs. Wolfe would like to avoid the licensing issues.

Vinsel noted that California requires reports from experts. He asked about Doug Swanston's research. Freeman said that Swanston was the leading researcher on landslides in coastal forests in Alaska. He is now retired. The DNR Division of Geological and Geophysical surveys does some work on geologic hazards, especially earthquake hazards, but they don't have a cadre of people for forestry work.

Vinsel asked whether the goal is to prevent all slides, or those that have consequences for fish habitat, water quality, economics, or safety? We can't stop all slides – many happen naturally. The concern is for those with adverse impacts. Slenkamp added that slopes in Alaska are waiting to slide. Slides associated with timber harvest usually carry less debris. Freeman noted that

Swanston's work showed that the number of slides increased with timber harvesting, but slides associated with harvesting were shorter on average, and a lower percentage entered fish streams.

Girt noted that the phrase "is likely to occur" exists in 11 AAC 95.290(d), the S&TC item for which there was no consensus. He wants to be sure we keep it to that specific context. "Likely" is a probability term.

Staunton addressed the question of who makes the call on FRPA issues such as when something is "likely to occur." A DPO starts a conversation among the agencies and with the operator and landowner to determine whether the operator will be able to meet the intent of the Act. The local DOF Area Forester makes the decision with input from DEC and ADF&G. The Area Forester is familiar with the ground and the people involved and must be comfortable that the proposed activities will comply with the Act. There is dialogues among the parties, field inspections, and if necessary directives to the owner or operator. The operator or other parties can influence the decision by providing additional information [e.g., on ground conditions, equipment available, etc.], and operators can appeal a decision with which they disagree. FRPA decisions are made administratively rather than judicially. Freeman added that if DEC or ADF&G disagree with the DOF decision, they can elevate the decision to the directors/state forester, and then the commissioners.

Burkhart noted that the people doing the initial layout of timber operations are usually foresters and engineers.

Kaelke summarized, saying that the onus for identifying the likelihood of landslides is initially on the operator through the DPO. Freeman concurred, and said that the DPO is then reviewed by the three agencies. Moselle added that the operators also have to show fish streams in the DPO, and ADF&G reviews that information. If a problem occurs in a fish stream, ADF&G also has authorities to deal directly with the operators in addition to the authorities that DNR has under FRPA.

Wolfe commented that Sealaska has digital mapping with 5-meter contours on its land – it has the money to get that level of information in advance. Hanley said that type of information has improved the DPOs. Palkovic stressed that site visits are still important – there's so much variation on the ground. Wolfe agreed that a ground view is still necessary. Staunton said that if you have the money to look at what's proposed, that's the best way to deal with it.

Slenkamp said that the closer an operation is to a populated area, the more scrutiny it will get. He added that landowners face liability if problems do occur.

Discussion of S&TC recommendations.

◆ Discussion of S&TC C1:

"**C1.** For the purposes of the FRPA and its regulations, define both "landslide" and "mass wasting" using the definition under 11 AAC 95.900 (44):

"mass wasting" means the slow to rapid downslope movement of significant masses of earth material of varying water content, primarily under the force of gravity."

Wolfe asked whether the S&TC consensus point means that "landslide" and "mass wasting" mean the same thing. Freeman and Moselle said yes, for the purposes of FRPA.

IGC1: The Implementation Group concurs with the S&TC C1 without change:

C1. For the purposes of the FRPA and its regulations, define both "landslide" and "mass wasting" using the definition under 11 AAC 95.900 (44):
"mass wasting" means the slow to rapid downslope movement of significant masses of earth material of varying water content, primarily under the force of gravity.

◆ Discussion of S&TC C2 and C3am:

"**C2.** Change the terms "unstable slope" and "unstable or slide-prone slope" to "unstable slope or slide-prone area" wherever they appear in the regulations."

"C3am. "Unstable slope or slide-prone area" means a slope or area, generally in excess of 50% gradient, where one or more of the following indicators may exist. Slide risk depends on the combination of factors at a given site.

- landslide scar initiation zones,
- jack-strawed trees,
- gullied or dissected slopes,
- a high-density of streams or zero-order basins (source basins for headwater streams), or
- evidence of soil creep.

The S&TC recognizes that slope dissection is a significant indicator of slide risk, but difficult to assess – closely spaced dissections are a red flag, as are few dissections that funnel to a common collecting area. The S&TC recommends that the procedures in Chatwin, et al., 1994 be referenced in assessing landslide risk. One rule of thumb for assessing frequency of dissection would be where dissections are so closely spaced that they preclude split-yarding. This distance is approximately equal to tree height."

Burkhart asked whether the S&TC used tree height as a guideline for highly-dissected slopes in C3am. Hanley and Freeman replied that the S&TC suggested it as one estimate, but it is just provided as background, not a requirement.

Hanley noted that the USFS also uses slope dissection in its analyses of slope stability.

Girt asked why the proposed definition includes "area." Staunton said that the S&TC wanted to look at broader areas as well as the immediate site. Hanley added that the definition also includes areas between 50% and 67% gradient that aren't included in the references to steep slopes.

Wolfe said that he understands the interest in having consistent terms, but isn't ready to substitute the proposed term everywhere. For example, it shouldn't automatically replace "slopes greater than 67%." Freeman replied that "unstable slope or slide-prone area" and it's definition apply to the terms other than "greater than 67%."

Wolfe said that many of the terms in the C3am definition are ambiguous and he questions having them in regulation. He thinks they would fit better in the BMP Implementation fieldbook [the "purple book"].

Moselle noted that the DPO regulations in 11 AAC 95.220(a)(9)(A) already refer to "areas." He doesn't see any change in intent from using the term "unstable slope or slide-prone area." Wolfe said that the change would require additional information in a DPO. "Area" is a broader and more general term. If information is missed, would the DPO be inadequate? Some of the definition terms are not well-defined. Moselle said that concern is valid, and asked whether a consistent term would work if the definition were fixed to be perfect? Wolfe said he wasn't sure. He would like a chance to search for all the "unstable slope…" terms in the regulations before making a decision.

Hanley stated that "slide-prone area" covers areas with a known history of slides, whereas an "unstable slope" may not have slid yet. Girt stated that "slide-prone areas" and "unstable slopes" are one and the same – if they are unstable, they've slid at some point in the past. Southeast Alaska is an unstable landscape. He is concerned that the definition and term will expand the areas where end-haul and full-bench road construction are required.

Palkovic reiterated that the "unstable and slide-prone" term is outside the "slope greater than 67%." Moselle noted that slope gradient is measurable. There is a need to better define the other three terms. The S&TC felt that the three terms were similar and undefined. The lack of definitions gives unpredictability – how can we improve that. Wolfe said he looks at the definitions from the perspective of whether something can come back to haunt you.

Girt said that we need to be clear that the term applies to the affected site, not just a general area.

Palkovic said that we already need to use a combination of slope gradient and some of the factors in the proposed definition. The proposed language actually makes it more definite.

Wolfe said that operators would have to show the areas in the definition on the DPO, and "slopes" are more discrete than "areas." That may not be a great consequence. It may be a bigger deal in 11 AAC 290(d) [road construction].

Freeman reiterated that the S&TC intended to provide guidance for identifying areas with slide risks that were outside the ">67% slope" category.

Slenkamp said that you need to be on the ground to assess risk. Wolfe emphasized that one of the original 1990 FRPA principles is that the Act must be implemented in the field. Hanley added that the information in the DPO is important to help determine when the agencies need to be on the ground.

Moselle said that he is uncomfortable having important terms undefined in the regulations. There isn't a measurable threshold for "unstable/slide-prone." If a consistent term isn't used, there will then be multiple undefined terms.

Girt asked whether an area is 20 acres or 200 acres? He reacted to the term "watershed" being used to describe an "area" in the discussion.

Vinsel suggested using one of the other terms ["unstable slope" or "unstable or slide-prone slope"] as the consistent term. Staunton said that Dennis Landwehr, the soil scientist on the S&TC, described "areas" as having multiple problems; they can have both stable and unstable areas within them. Staunton could conceive of folding the concept into "slope." Moselle commented that "slopes" can also be small or large areas. Palkovic noted that the regulations already use "unstable slope or slide-prone area" multiple times. Moselle stated that there isn't a sufficient difference between the terms.

Slenkamp quoted the dictionary as using "slope" for an incline, whereas "area" has broader and more varied definitions.

With reference to 11 AAC 95.290(b), Palkovic said that "areas" would be broader, "slope" is more a pinpoint feature. However, there is little difference in the field. A cluster of slide-prone slopes would be a slide-prone area.

Hanley said that information in DPOs varies in the sufficiency and quantity of data. In Sealaska DPOs, you can find the steep slopes right off the bat. That's not true of DPOs from all sources.

Kaelke suggested referring to road "segments" rather than whole roads might reduce the concern over unintended impacts of the definitions. Freeman cautioned that the existing regulations are designed to apply to the part of the road in the area of concern, not to the whole road. Switching to "segments" might suggest that the whole extent of a road is intended if not otherwise specified.

Hanley pointed out that 11 AAC 95.290(b) already uses "slide-prone area" and it's unacceptable to leave it undefined.

Burkhart said that he has worked on a lot of federal timber sales that have EIS's. When they use "area," they encompass big sites, like 700 acres. With slides they use "slope stability." Hanley noted that federal sales may also say, "such and such areas of Unit X exceed 72%...".

Staunton noted that the regulations are law. "Slope" is ambiguous, too, and is still a significant piece of real estate.

Wolfe closed the discussion by saying that he wants to study the impact of the terms and definitions more closely. Freeman said she would provide a document showing all the places where each of the "unstable slope" terms are used. She asked that all the I.G. members review that list and before the August 23 web conference, consider

- whether a consistent term is needed, and if so, which term,
- whether definition(s) are needed,
- whether definition(s) and indicators (e.g., "jack-strawed trees") should be located in the regulations, the implementation field book ("purple book"), or some other place.

◆ Discussion of S&TC C4:

"C4. Leave the term "high risk of slope failure" in 11 AAC 95.280 (d)(1) unchanged."

The Implementation Group concurred that no change or definition was needed for this term.

IGC2: The Implementation Group supports S&TC C4 without change:

S&TC C4. Leave the term "high risk of slope failure" in 11 AAC 95.280 (d)(1) unchanged.

◆ Discussion of C5am:

"C5am. Add the following term to the definitions in 11 AAC 95.950: **"Unstable fill material"** means organic debris, organic soil, or fine-textured mineral soils. A fine-textured soil has a texture of silty-clay, sandy-clay, or clay.

Change ,290(b)(2) as follows:

11 AAC 95.290. Road construction. […]
(b) If constructing a road on a slope greater than 67 percent, on an unstable slope, or in a slide-prone area is necessary, an operator […]
(2) shall balance cuts and fills so that as much of the excavated material as is feasible is deposited in the roadway fill section; however, unstable fill material may not be used [IF IT IS UNSTABLE, FINE TEXTURED, OR PRONE TO MASS WASTING] and cuts must be minimized where fine textured soils are known or encountered; "

Slenkamp commented that the proposed language defines the term better. Moselle said that the terms in the definition are measurable and consistent with the soil texture classes used in soil science. That helps in the field. It is also good to get rid of "prone to mass wasting," which is another phrasing for "unstable slope or slide-prone area."

Palkovic said that she wanted to think about whether the proposed change sets up an internal conflict with .290(b)(1) and (2) regarding the use of organic material in road beds.

Pending the results of Palkovic's review, the Implementation Group concurred with the recommendation from the S&TC without change.

IGC3: The Implementation Group supports S&TC C5am without change:

S&TC C5am. Add the following term to the definitions in 11 AAC 95.950: **"Unstable fill material"** means organic debris, organic soil, or fine-textured mineral soils. A fine-textured soil has a texture of silty-clay, sandy-clay, or clay.

Change .290(b)(2) as follows:

11 AAC 95.290. Road construction. […]
(b) If constructing a road on a slope greater than 67 percent, on an unstable slope, or in a slide-prone area is necessary, an operator […]
(2) shall balance cuts and fills so that as much of the excavated material as is feasible is deposited in the roadway fill section; however, unstable fill material may not be used [IF IT IS UNSTABLE, FINE TEXTURED, OR PRONE TO MASS WASTING] and cuts must be minimized where fine textured soils are known or encountered;

◆ Discussion of S&TC C6:

C6. Add to **11 AAC 95.360 Cable yarding: […]** (c) The following standards apply to cable yarding operations: […]
(6) on unstable slopes or slide-prone areas, an operator shall minimize disturbance to soils, understory vegetation, stumps, and root systems. ***Add to this section or to .340:*** In these areas, an operator should consider partial cuts, helicopter yarding, retention areas, or other techniques designed to meet these objectives.

Wolfe suggested that the I.G. consider adding "where feasible" to this BMP. Freeman noted that the proposed language already uses the standard "minimize". After some discussion, and a review of the definition in the regulations for "feasible", Palkovic and Vinsel noted that the definition for minimize in the regulations incorporates the term "feasible," and feasible includes economic considerations.

"minimize" means to limit to the extent feasible, and does not include the requirement of improving naturally existing conditions;

"feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, technical, and safety factors;"

In light of these definitions, the Implementation Group concurred with the following language as proposed by the S&TC.

IGC4: Pending review of the term "unstable slope or slide-prone area," the Implementation Group supports the first portion of the S&TC C6 recommendation that adds the following language to 11 AAC 95.360:
"(c) The following standards apply to cable yarding operations: […]
(6) on unstable slopes or slide-prone areas, an operator shall minimize disturbance to soils, understory vegetation, stumps, and root systems."

Moselle commented that "feasible" doesn't give license to operators to do just anything. You know what disturbance looks like on the ground. Slenkamp said that it is good to have a club to ensure compliance.

Regarding the remaining part of S&TC C6, the I.G. recommended putting the language in 11 AAC 95.340 [harvest unit planning and design] rather than in .360 [cable yarding].

Slenkamp said that if you have unstable slopes, you should be looking at different methods of harvest. Girt said that there are two issues – full-suspension yarding and partial cutting. Wolfe said that the goal for yarding is full suspension, not whether full suspension is achieved by helicopter yarding or cable yarding. Slenkamp commented that there are many variables involved in deciding whether to use helicopter or cable systems. Wolfe said that it is OK to include helicopter yarding, as long as it is clear that it is just one of the possible techniques that may be appropriate.

Palkovic asked whether "selective cut" is better than "partial cut." Wolfe and Slenkamp said that the terms are interchangeable. Freeman noted that "partial cut" is the term that is defined in the regulations.

Palkovic noted that partial cuts aren't always better depending on site conditions. Wolfe said that the applicability of partial cutting to decreasing ground disturbance depends on how the cut is designed. Burkhart reiterated that you need to do the ground work to determine the appropriate techniques to use. Hanley said that it is OK to include "partial cuts" in the list of possible techniques as long as the term "should consider" is used.

Pending discussion on August 23 of the term "unstable slope or slide-prone area," the group agreed to add the following language to 11 AAC 95.340: "On unstable slopes or slide-prone areas, an operator should consider techniques designed to minimize distgrubance to soils, understory vegetation, stumps, and root systems such as partial cuts, retention areas, or use of helicopter or skyline systems to achieve full suspension of logs."

DRAFT IGC5: Pending review of the term "unstable slope or slide-prone area," the Implementation Group supports adding language to implement the second portion of S&TC C6 to 11 AAC 95.340 as follows:

"On unstable slopes or slide-prone areas, an operator should consider techniques to minimize disturbance to soils, understory vegetation, stumps, and root systems. Examples of possible techniques include partial cuts, retention area, and use of helicopter or skyline systems to achieve full suspension of logs."
Note: As I typed this, I thought that splitting this into two sentences and adding the highlighted phrase might make it clearer. We can review this at the Aug. 23 meeting.

◆ Discussion of S&TC C7:

"C7. Add to **11 AAC 95.365. Tracked and wheeled harvest systems**: (a) A person may not skid timber or operate construction equipment or machinery in a water body catalogued as anadromous under AS 16.05.871, without written approval of the Department of Fish and Game, or in any other surface waters, marshes, [OR]non-forested muskegs, or unstable

slopes or slide-prone areas without prior notice to the division except, that equipment may be operated on frozen surface waters, marshes, or non-forested muskegs without prior notice to the division."

Moselle noted that we will have to review this after the I.G. completes its discussion of the term "unstable slope or slide-prone area."

Slenkamp commented that although ground-based operations usually avoid steep slopes, some operators only have shovels and may push slope limits.

Girt said that this situation is already covered by the BMPS on harvest unit planning and design in 11 AAC 95.340. Moselle said that the proposal differs from the existing BMPs in that it includes construction machinery. Some operators are using shovels on steeper ground than in the past and the technology is changing. Ground-based systems may be more applicable on steep slopes in the future.

Wolfe stated that the DPO should already include this information, and asked whether this would require a different notice. Hanley said that the DPO doesn't specify where different yarding techniques are used within a given unit. Freeman said that this notice should come through the DPO, not a separate form. Wolfe said something different should be done to the DPO form if this isn't covered. Palkovic reported that operators vary in how much detail they show on the DPO. Slenkamp elaborated that the issues largely occur with small operators. Palkovic observed that larger operators sometimes don't provide this information either. She added that the other information required by 11 AAC 95.365 also comes through the DPO form. Wolfe clarified that this recommendation would provide the foundation for requiring this information in the DPO.

Staunton said that this would apply where operators use ground-based equipment on slopes >50%. In those situations, DOF would want to discuss the proposed activities with the operator first. Palkovic supported keeping the proposed language in 11 AAC 95.365. Moselle said that the proposed language would be redundant in 11 AAC 95.220 [Detailed Plans of Operation] but complementary in .365 [tracked and wheeled harvest systems].

Hanley added that he has not seen DPOs show stream crossings in shovel yarding units. Palkovic agreed and said crossings are usually discussed with operators in the field.

DRAFT IGC6: Pending review of the term "unstable slope or slide-prone area", the Implementation Group supports S&TC C7 without change:

> **C7.** Add to **11 AAC 95.365. Tracked and wheeled harvest systems**: (a) A person may not skid timber or operate construction equipment or machinery in a water body catalogued as anadromous under AS 16.05.871, without written approval of the Department of Fish and Game, or in any other surface waters, marshes, [OR]non-forested muskegs, or unstable slopes or slide-prone areas without prior notice to the division except, that equipment may be operated on frozen surface waters, marshes, or non-forested muskegs without prior notice

to the division.

◆ Discussion of C8/C9am: In response to a question, Freeman clarified that the proposed definition of saturated soils in C9am applies specifically to 11 AAC 95.290.

Next meeting. The next meeting will be a web conference on August 23. We will have sites in Ketchikan and Juneau. Members from Klawock and Petersburg can connect in directly or join one of the other sites.

Agenda

- C2 and C3am: review how the various terms related to unstable slopes and slide-prone areas are used, decide whether a consistent term is needed, recommend definition(s) as needed, and recommend where the definitions should reside (e.g., in the regulations or implementation handbook).
- Determine the appropriate "unstable/slide-prone" term in S&TC C6 and C7.
- Discuss and develop recommendation for C8 (blasting and excavation)
- Discuss and develop recommendation for C9 (saturated soil definition)
- Discuss the non-consensus item regarding the BMP in 11 AAC 95.290(d) (end-hauling and full-bench construction)
- Discuss and make recommendations for C10 (training needs)

To Do List

Marty Send summary sheet on use of "unstable/slide-prone" terms to I.G. ***done 8/9/11***
Send minutes from S&TC meetings to I. G. ***done 8/16/11***
Send draft minutes from this meeting to I.G ***done 8/16/11***
Send copy of Chatwin guide or link to it to the I.G. ***done 8/18/11***
Review Hartsog 1990 and send paper to Vinsel ***done 8/18/11***
Send chart of public safety options to Wolfe ***done 8/9/11***
Send minutes to public mail list

All: Review draft minutes and send edits to Marty
Read abstracts for starred references in the bibliography
Review the uses of "unstable/slide-prone" terms

Handouts

Agenda
IG Contact list
Mail list
IG Organization
White paper
Scoping model/caveats and maps
S&TC Scoping consensus points
S&TC Phase 2 consensus points

S&TC Phase 2 recommendations relative to regulations
BOF December, 2010 minutes excerpts
FRPA fieldbooks